Maine School IPM Fact Sheet
Turf Fertilizer

Fertilizer Analysis

The fertilizer analysis is listed on the label as a series of three numbers. For example, consider a 50 lb. bag of fertilizer with an analysis of 10-6-4. The first number lists the percentage of nitrogen. In this example 10% of the bag is Nitrogen (abbreviated as N). The second number is the percentage of Phosphorus (P_2O_5). In this example 6% of the bag is Phosphate. The third number is the percentage of Potassium (K_2O). In this example, 4% of the bag is Potash. Thus our 50 lb. bag of fertilizer actually contains:

5.0 lb. of Nitrogen	(50 lb.. x 10%)
3.0 lb. of Phosphate	(50 lb.. x 6%)
2.0 lb. of Potash	(50 lb.. x 4%)

Determining Application Amounts

A common measure of area used by turf managers is 1000 square feet (abbreviated as M). Rates of application are usually stated as pounds of nitrogen per 1000 square feet. For example:

*   Fertilizer with a 10-6-4 analysis
*   Application rate of 0.5 lb. of nitrogen per 1000 square feet (0.5 lb. N / M).

*   **Application rate / % Nitrogen = Pounds of fertilizer product to use**

Example #1:   Amount of product needed to apply 0.5 lb. of nitrogen / M is
                  0.5 lb. / 10% = 5.0 lb. of fertilizer product

Example #2   Amount of product needed to apply 1.5 lb. of nitrogen / M is
                  1.5 lb. / 10% = 15.0 lb. of product

Spreader Calibration

Determining what setting to use on your spreader to apply the target rate is termed calibrating. Described below is one of the most common ways to calibrate a spreader.

* Determine the width of spread for the fertilizer product in your spreader.
* Divide 1000 square feet by the width of spread to calculate length of travel to end point. (Example: Width of spread is 10', thus 1000/10 = 100' length of travel)
* Designate the starting point of application and the end point.
* Place 20 pounds of fertilizer product in the spreader.
* Apply the product from start point to end point at a predetermined setting.
* Subtract weight of remaining material from 20 pounds to determine amount used.
* **(Pounds of product used) x (% nitrogen) = rate of application**
* Example: 20 lb. of product placed in spreader. 5 lb. remaining after covering 1000 square feet. 15 lb. of product used on 1000 square feet.
   Rate of Application = (15 lb.) x (10%) = 1.5 lb. N/M at this setting
* Record this rate and setting for future reference.
* Adjust the setting and repeat calibration process until the desired application rate is achieved.

Sources of Nitrogen

Nitrogen sources are commonly classified as either water insoluble (WIN) or water soluble (WSN). WIN is also called slow release nitrogen and WSN is known as quick release nitrogen. Water insoluble nitrogen is not immediately available for plant use and is converted over time into compounds for plant uptake. Water soluble nitrogen is already in plant uptake form. Advantages to utilizing WIN include; low salt index (low burn potential), low potential for leaching into groundwater, and a gradual metering of nutrients from a single application. WSN has the opposite qualities; high salt index (high burn potential), high leaching potential (potential groundwater contaminant), and it can cause an undesirable flush of growth as the plant uses the excess nutrient (more frequent mowing required).

Application rates and frequency are different for WIN and WSN. Water insoluble sources of nitrogen can be applied at rates up to 1.0 - 1.5 lb. N / M which allows for controlled growth over a period of 8 - 12 weeks. Water soluble nitrogen sources should never be applied at rates exceeding 0.5 lb. N / M and ideally would be used at lower rates with more frequent applications. Below is a comparison of programs:

| WIN Source | 1.0 lb. N / M applied May 21 |
| | 1.0 lb. N / M applied August 21 |

WSN Source	0.33 lb. N / M applied May 21
	0.33 lb. N / M applied June 14
	0.33 lb. N / M applied July 14
	0.33 lb. N / M applied August 14
	0.33 lb. N / M applied September 7
	0.33 lb. N / M applied October 1